

## ABSTRACT

A pipe flange apparatus includes a first pipe flange having a frontal face surrounding a central bore passing through the flange, the face comprising an internal flange recess extending into the flange and surrounding the bore, and a groove extending into the flange and surrounding the internal flange recess, wherein the internal flange recess comprises a textured surface at least partially surrounding the bore. Some such apparatus may also have an internal flange having first and second portions surrounding a bore extending through the internal flange, wherein the first portion is positioned at least partially within the internal flange recess of the first pipe flange and in contact with the textured surface of the first pipe flange. In at least some embodiments the second portion extends into the bore, and a first sealing ring positioned at least partially within the groove surrounding the internal flange recess. Some such apparatus may also have a second pipe flange similar to the first pipe flange in regard to the internal flange recess and a second internal flange similar to the first internal flange.